



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

MAY 19 2010

Colonel Keith A. Landry
District Engineer
Louisville District Corps of Engineers
Attn: David Baldridge (Regulatory Branch)
U.S. Army Corps of Engineers
OP-FN, Room 752
P.O. Box 59
Louisville, Kentucky 40201-0059

Subject: Czar Coal Corporation – Scaffold Lick Branch Coarse Refuse Storage Site (Kentucky Division of Mine Permits Permit No. 880-8002 A4) and Big Sandy Regional Airport Runway Extension (COE Permit No. LRL-2008-00226)

Dear Colonel Landry:

The U.S. Environmental Protection Agency (EPA), Region 4, has completed its review of Czar Coal Corporation's proposed Scaffold Lick Branch Coarse Refuse Storage Site project (LRL-2008-00226) in Martin County, Kentucky. Our review included the U.S. Army Corps of Engineers (COE) permit application dated January 2008, revised compensatory mitigation work plan submitted May 5, 2008, supplementary water quality and biological monitoring data submitted to EPA, the Kentucky Division of Mine Permits (KDMP) mine permit, and the Kentucky Division of Water's (KDOW) Pollution Discharge Elimination System (KPDES) permit, dated April 1, 2010. This review is being conducted in accordance with the Enhanced Coordination Procedures (ECP) for surface coal mining applications as detailed in the June 11, 2009, *Memorandum of Understanding among the U.S. Department of Army, U.S. Department of Interior and the U.S. Environmental Protection Agency Implementing the Interagency Action Plan on Appalachian Surface Coal Mining*.

EPA's review is intended to ensure that the proposed project meets the requirements of the Clean Water Act (CWA). The CWA Section 404(b)(1) Guidelines (40 C.F.R. Part 230) provide the substantive environmental criteria against which this application must be considered. Fundamental to the Guidelines is the premise that no discharge of dredged or fill material may be permitted if: (1) it causes or contributes, after consideration of disposal site dilution and dispersion, to violations of any applicable state water quality standard; (2) a practicable alternative exists that is less damaging to the aquatic environment; or (3) the nation's waters would be significantly degraded. On April 1, 2010, the U.S. Environmental Protection Agency (EPA) released interim final guidance to the Regional offices titled: *Guidance on Improving EPA Review of Appalachian Surface Coal Mining Operations under the Clean Water Act, National Environmental Policy Act, and the Environmental Justice Executive Order* (SCM Guidance). The SCM Guidance provides a framework for the Regions when they review permits for

discharges associated with Appalachian surface mining projects. At the same time, EPA released two Office of Research and Development (ORD) reports: *The Effects of Mountaintop Mines and Valley Fills on Aquatic Ecosystems of the Central Appalachian Coalfields* and *A Field-Based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams (Benchmark Conductivity Study)*. The ORD reports are being submitted to the EPA Science Advisory Board (SAB) for review and are also publicly available. In the interim, EPA views the reports as providing information, along with published, peer-reviewed scientific literature, that may inform permit reviews.

Czar Coal's proposed Scaffold Lick Branch project was placed on the final list of applications subject to the ECP on September 30, 2009, due to environmental concerns over the potential for further impact minimization, the adequacy of the compensatory mitigation, cumulative impacts, and the potential for downstream water quality impacts which could result from the proposed coarse refuse fill. The proposed project is the fourth amendment (KDMP Permit No. 880-8002 A4) to an existing Surface Mining Control and Reclamation Act (SMCRA) permit for Czar Coal's Pinnacle Processing Preparation Plant and associated areas, and includes the construction of an additional coarse refuse fill (Refuse Fill No. 2) and borrow areas, and an existing sediment pond (Pond 22). The coarse refuse fill will be constructed over an existing hollow fill and associated sediment pond, and will utilize the existing downstream sediment pond, Pond 22. Impacts include 2,012 linear feet (lf) of intermittent and ephemeral jurisdictional streams and 0.69 acres (ac) of jurisdictional wetland. The refuse fill will abut the Big Sandy Regional Airport (BSRA) to the north, and is surrounded on the south and southeast by an existing coal slurry impoundment and coarse refuse storage area currently used by the Pinnacle Processing Preparation Plant.

The ECP process was initiated by the Louisville District COE on April 14, 2010, and concludes on June 11, 2010. Prior to and during the 60-day process, EPA has had numerous discussions with the COE and the applicant. On February 4, 2010, EPA and the COE conducted a joint meeting and site visit with Czar Coal; Booth Energy (owner, Czar Coal Corporation); BSRA; Congressman Hal Roger's office; KDOW; and KDMP to discuss the current status of, and convey EPA concerns regarding, the proposed project. During this meeting, EPA expressed concerns regarding the proposed project purpose; water quality concerns, including the adequacy of the KPDES permit and potential best management practices (BMP) and on-site alternatives to avoid and/or minimize impacts to waters of the United States; compensatory mitigation; and cumulative impacts. On March 16, 2010, EPA attended a pre-ECP presentation given by Czar Coal on the proposed project at the request of the COE to confirm the status of the proposed project and discuss outstanding concerns. Prior to this meeting, EPA formally requested via email additional information from the applicant to address these concerns. We received the applicant's response to our comments on May 9, 2010, and have reviewed the supplemental information that was provided by this response.

Alternatives Analysis – 40 CFR 230.10(a)

The applicant defined the basic project purpose in the original COE application, dated January 2008, as the development of a coarse refuse storage site, and the overall project purpose as the storage of coarse refuse generated at the Pinnacle Processing Preparation Plant. However,

on October 27, 2009, Czar notified the COE that new information had recently developed regarding the proposed project basic purpose since there had been a significant change relating to the use of the proposed fill: the Federal Aviation Administration (FAA) recently informed the adjacent BSRA of a safety overrun regulation for which the airport is no longer in compliance. In their letter, the applicant states that the airport is now relying on the construction of the proposed coarse refuse fill to extend the runway an additional 200 feet on both ends in order to comply with FAA regulation. With this modification, the proposed project is currently defined as “the development of a coarse refuse storage site and operation of the Big Sandy Regional Airport at its existing classification.” The overall project purpose is “the storage of coarse refuse generated at the Pinnacle Processing Preparation Plant and development of safety overrun areas for the BSRA in compliance with the applicable FAA regulation.”

The proposed refuse fill is expected to reach capacity within nine years. The fill proposed for the runway expansion could potentially be complete within five to seven years. The BSRA stated, during the February 4, 2010 on-site meeting, that the FAA would consider the airport once again in compliance as soon as the airport begins addressing the safety overrun issue (i.e., when construction begins), regardless of the five to seven years it will take to complete that portion of the refuse fill.

According to the applicant, an on-site underground mine supplies approximately 90 percent of the raw feed for the preparation plant. Coarse refuse is currently transported from the preparation plant via a conveyor belt system and stored on-site adjacent to the existing impoundment, which stores fine refuse (i.e., coal fines or “slurry”) from the preparation plant. During the February 4, 2010 meeting and site visit, the applicant informed EPA and the COE that the existing coarse refuse disposal site is expected to reach maximum storage capacity within the next year. The preparation plant has already been upgraded to improve plant efficiency and the applicant stated that no further efficiencies are possible over the remaining 20-year operational lifetime of the plant.

According to the Section 404(b)(1) Guidelines, only the least environmentally damaging practicable alternative (LEDPA) may be permitted, and to identify the LEDPA, the applicant’s alternatives analysis must examine a full range of alternatives that would avoid and minimize impacts to aquatic resources to the maximum extent practicable. The applicant identified a total of five alternative disposal locations for the proposed coarse refuse storage site. Four of the five alternatives were eliminated because they were either too far away (greater than a 0.5-mile haul distance from the truck bin at the end of the existing conveyor from the preparation plant) or did not have enough storage capacity. Based on the applicant’s statements, upgrades have made the preparation plant as efficient as possible and the proposed refuse area is designed to provide nine years of capacity. Based on information contained in the SMCRA authorization and provided to EPA by the applicant, it appears the proposed site will only fulfill a portion of the coarse refuse disposal needs from the preparation plant. If this is the case, EPA recommends that the COE conduct an alternatives analysis which evaluates the full life span and disposal needs of the preparation plant to adequately assess reasonably foreseeable impacts. As noted, this watershed has already experienced degradation of streams and adverse cumulative ecosystem effects due to mining, and any foreseeable future effects from coal processing at this site will need to be incorporated into both an alternatives analysis for the proposed project as well as the cumulative

effects analysis (see discussion below), especially given the applicant's statement that only disposal sites within a 0.5 mile radius of the processing plant are practicable.

The preferred alternative minimizes impacts to waters by constructing the coarse refuse fill on an existing fill (HF4) and sediment pond (Pond 3) constructed on an overlapping SMCRA permit (KDMP 880-0157) previously authorized by the COE in 2004 (LRL-2004-00332). The preferred alternative utilizes the existing pond (Pond 22) constructed under SMCRA permit KDMP 880-7010 for sediment and stormwater control. However, this alternative will eliminate the associated compensatory mitigation reach (i.e., restoration of the drainage corridor and sediment pond associated with existing HF4) for impacts associated with KDMP 880-0157.

The applicant has proposed a single-fill design, Refuse Fill No. 2, for the disposal of coarse refuse material. This design proposes to discharge fill into the left and right branches of the head of Scaffold Lick Branch, as well as the main branch. It appears that an equivalent storage, two-fill design could be considered that would allow refuse to be placed individually in the left and right fork of the head of Scaffold Lick Branch. This design would minimize surface area disturbance during construction and allow for a sequenced fill construction approach, including both monitoring and adaptive management plan as described in the attached recommended permit conditions (see Attachment). EPA recommends that the applicant provide an alternative analysis for such a two-fill design. A comparison of the storage volume of both alternatives should be provided based on both anticipated years of mining and the operational lifetime of the preparation plant.

Compliance with Other Environmental Standards – 40 CFR 230.10(b)/Significant Degradation of the Aquatic Ecosystem – 40 CFR 230.10(c)

The Guidelines require that no discharge of dredged or fill material shall be permitted if it will cause or contribute, after consideration of disposal site dilution and dispersion, to an exceedance of any applicable State water quality standard (40 C.F.R. 230.10(b)) or which will cause or contribute to significant degradation of the waters of the United States (40 C.F.R. 230.10(c)). The Commonwealth of Kentucky's water quality standards include a narrative criterion that prohibits the discharge of toxic substances in toxic amounts. Specific provisions in the water quality standards are:

"Total dissolved solids or specific conductance shall not be changed to the extent that the indigenous aquatic community is adversely affected." 401 KAR 10:031, Section 4(1)(f); and

"Surface waters shall not be aesthetically or otherwise degraded by substances that injure, are chronically or acutely toxic to or produce adverse physiological or behavioral responses in humans, animals, fish and other aquatic life." 401 KAR 10:031, Section 2.

A growing body of evidence demonstrates that certain pollutants associated with coal mine discharges are causing or contributing to violations of narrative water quality standards. Recent studies have shown that there is a direct correlation between stream impairment and discharge of total dissolved solids (TDS)/specific conductivity (SC) due to coal mining and coal processing. Much of this body of developing information regarding the extent to which coal mines are causing, or could cause, impairments to waters receiving discharges from coal mines

in Appalachian coal mining regions has recently become available. The ORD draft report released on April 1, 2010, recognizes aquatic life impacts associated with conductivity and concludes that genus-level impacts to the biological community occur at SC levels of 300 $\mu\text{S}/\text{cm}$ or greater.

In addition, the KDOW's own 2008 list of impaired waters provided to EPA under Section 303(d) of the CWA identified 1,199 stream miles in the Upper Kentucky River watershed, 487 stream miles in the Upper Cumberland River watershed, and 780 stream miles in the Big Sandy/Little Sandy/Tygarts Creek watershed as impaired with coal mining identified as a suspected source. The "2008 Integrated Report to Congress on Water Quality in Kentucky" (305(b) Report), Table 3.3.1-4, ranks TDS as the seventh leading cause of pollution to Kentucky rivers and streams and ranks SC as seventeenth.

EPA has reviewed supplemental water quality and biological monitoring data collected by Czar and submitted upon request from EPA, including CWA Section 402 discharge monitoring reports, KDMP baseline surface water quality data, and COE permit application biological monitoring data. Scaffold Lick Branch, the proposed discharge area, is currently unassessed by the State, in which case the State classifies such streams as high quality waters, which in this case has the following designated uses: warm water aquatic habitat, primary/secondary contact recreation, and domestic water supply. Middle Fork Rockcastle Creek has warm water aquatic habitat impairment for sedimentation/siltation, sulfates, and TDS, and has a conductivity and sulfate level of 1,622 $\mu\text{S}/\text{cm}$ and 600 mg/L, respectively. Further downstream, Rockcastle Creek has warm water aquatic habitat impairment for the following pollutants: sedimentation/siltation and TDS (section 0.0 – 3.7), sedimentation/siltation, sulfates, and TDS (section 3.7 – 13.25), and sedimentation/siltation (section 13.25 – 15.3).

The 2008 COE application for the proposed project reports that Scaffold Lick Branch has a conductivity level of 2,290 $\mu\text{S}/\text{cm}$. The stream habitat score (based on EPA's Rapid Bioassessment Protocol (RBP) high gradient stream habitat form) measures 93, well below the tentative habitat criteria (RBP score of ≤ 116) used by KDOW to determine whether a sampling reach is supporting its designated use in Ecoregions 68-70. Macroinvertebrate community data collected sometime in 2003, and submitted with the COE application for KDMP 880-0157, indicate that the indigenous aquatic communities of Scaffold Lick Branch and its tributaries and Rockcastle Creek have been adversely affected by historic mining activities. Virtually no *Ephemeroptera* (mayflies) were found in either Scaffold Lick Branch and its tributaries or Middle Fork Rockcastle Creek. Surface water monitoring conducted on June 12, 2008, by Czar Coal on Middle Fork Rockcastle Creek reports conductivity and sulfate levels of 1,633 $\mu\text{S}/\text{cm}$ and 600 mg/L, respectively.

On April 1, 2010, KDOW issued an individual KPDES permit for the proposed project (KY0040495). EPA has been working with the KDOW to develop KPDES standard permit conditions that will provide the necessary requirements to address these surface coal mining stormwater quality concerns. As a part of the NPDES permit conditions, the permittee will be required to submit a monitoring plan (effluent and in-stream) within 30 days of permit issuance. The permittee must then submit the required analytical data, collected in accordance with the

approved monitoring plan, to DOW, within two years of issuance of the permit so that the state may conduct a reasonable potential analysis.

As stated above, water quality is relatively poor in both Scaffold Lick Branch and its tributaries, and in Middle Fork Rockcastle Creek. These conditions (described in further detail below; see Cumulative Effects) most likely existed before the establishment of the CWA and SMCRA. EPA believes there may be an opportunity with this permit to address these historic trends using the watershed approach to reduce the pollutant loadings to Scaffold Lick Branch and downstream waters, including Middle Fork Rockcastle Creek. Additional water quality-based conditions in the 404 permit will be necessary to ensure that the discharges authorized by the COE 404 permit will not cause or contribute to an exceedance of State water quality standards, or cause or contribute to significant degradation of waters of the United States consistent with the Guidelines (40 C.F.R. § 230.10(b) and (c)). We have enclosed recommended permit conditions to address water quality concerns that remain (see Attachment), and are willing to work with the COE, KDMP, and the applicant to develop an appropriate comprehensive watershed management plan that specifically addresses water quality issues associated with elevated TDS/SC, including in-stream chemical and biological monitoring, and an adaptive management plan with identified remedial actions.

Minimization and Compensation for Unavoidable Impacts – 230.10(d)

Czar originally proposed the construction of 1.38 ac of wetlands using an existing on-site sediment pond (Pond 22) to compensate for wetlands impacts, and a combination of stream creation using SMCRA-regulated drainage ditches and payment of a \$210,778.50 in-lieu fee (ILF) to the Kentucky Stream and Wetlands Mitigation Fund to compensate for impacts to ephemeral and intermittent streams. This fee included \$73,738.50 to compensate for the elimination of a proposed but not yet constructed mitigation reach associated with KDMP 880-0157 (i.e., sediment pond and associated drainage corridor immediately downstream of HF4). The applicant subsequently submitted a revised mitigation plan to the COE on May 5, 2008, which proposed only in-lieu fees (totaling \$235,918.50) to compensate for proposed stream impacts; the wetland creation plan remained unchanged from the original submittal. Following the pre-ECP meeting on March 16, 2010, and at EPA's request, the applicant has agreed to pay an additional \$49,690 ILF to compensate for the proposed impacts to jurisdictional wetlands.

Determination of Cumulative Effects on the Aquatic Ecosystem – 230.11(g)

The location of the proposed coarse refuse fill, Scaffold Lick Branch (a headwater tributary to Middle Fork Rockcastle Creek), has been impacted by extensive surface and underground mining activities (both pre- and post-SMCRA) and impacts associated with the construction of the BSRA. The Scaffold Lick Branch watershed was mined through the early 1980's, when mining ceased until 2004. Upon authorization by the COE in 2004, the applicant began extensively mining throughout the Scaffold Lick Branch watershed, and along Middle Fork Creek adjacent to the preparation plant, using a combination of area, contour, and auger mining methods under KDMP 880-0157. The applicant stated that approximately 50 percent of the area mined under 880-0157 has been reclaimed; the remaining 50 percent is undergoing active reclamation. Scaffold Lick Branch is also the location of the existing Big Hollow Refuse

Disposal Facility, which includes the 900-acre Big Hollow impoundment and associated coarse refuse disposal area.

The applicant conducted a Cumulative Impact Assessment (CIA) for the proposed project, including the Middle Fork Rockcastle Creek watershed, the 8-digit HUC watershed in which the impacts are located (i.e., Tug Fork), and all intermediate watersheds. Scaffold Lick Branch and Middle Fork Rockcastle Creek watersheds have been heavily impacted by historic and active mining activities since the early 1970's when construction began on the slurry impoundment. Nearly 50 percent of the Middle Fork Rockcastle Creek watershed has either been mined (23.1 percent), is being actively mined including reclamation (19.4 percent), or is proposed for future mining (4.1 percent). In 2001, Middle Fork Rockcastle Creek, a historically forested watershed, was estimated to be approximately 62 percent forested with less than 13.5 percent of interior forest (based on the 2001 and 2006 National Land Cover Database). The watershed experienced an additional five percent loss of forest cover between 2001 and 2006.

Surface water monitoring data collected by Czar continuously between 1995 and 2008 in Middle Fork Rockcastle Creek approximately 3,800 ft upstream of the confluence of Scaffold Lick Branch indicate that water quality in Middle Fork Rockcastle Creek has significantly degraded over the last 13 years as a result of historic and ongoing mining activities:

- conductivity values have increased 2.8-fold from 585 $\mu\text{S}/\text{cm}$ to 1,633 $\mu\text{S}/\text{cm}$
- pH increased from 7.26 to 8.13
- sulfates increased 1.7-fold from 350 mg/L to 600 mg/L

As noted, this watershed has already experienced degradation of streams and adverse cumulative ecosystem effects due to mining. Any foreseeable future effects from coal processing at the Pinnacle Processing Preparation Plant will need to be incorporated into the cumulative effects analysis, especially given the applicant's statement that only disposal sites within a 0.5 mile radius of the processing plant are practicable. In addition, EPA recommends that the applicant develop and implement a watershed approach to address these historic trends in water quality in Scaffold Lick Branch, Middle Fork Rockcastle Creek, and affected downstream waters. We are willing to work with the COE, KDMP, and the applicant to develop a comprehensive watershed plan and adaptive management plan (see Attachment) that builds upon existing CWA and SMCRA regulations and guidance to improve overall water quality and aquatic habitat in this watershed.

Lastly, EPA requests that the District provide us with the appropriate NEPA documentation that supports their permit decision. In this determination, EPA recommends that the District consider the cumulative impacts to the watershed from this proposed project taking into account both historic water quality and habitat impacts. The NEPA documentation should address how the proposed mitigation would serve as a basis for supporting a Finding of No Significant Impact. Our NEPA staff is willing to review and comment on draft NEPA documents that are prepared prior to the permit decision.

Conclusion

In conclusion, EPA believes that the project, as proposed, will require additional water quality-based conditions in the 404 permit to ensure that the discharges authorized by the COE 404 permit will not cause or contribute to an exceedance of State water quality standards, or cause or contribute to significant degradation of waters of the United States consistent with the Guidelines (40 C.F.R. § 230.10(b) and (c)). We are willing to work with the COE, KDMP, and the applicant to develop a comprehensive watershed plan and adaptive management plan, and we have included recommended permit conditions (see Attachment) that EPA believes, if authorized, will ensure project compliance with the 404(b)(1) Guidelines.

I want to thank you and your staff for your cooperation and willingness to address our issues. We look forward to working closely with you and the applicant to resolve the concerns outlined above. If you have any questions, please call me at 404-562-9470 or Stephanie Fulton of my staff at 404-562-9413.

Sincerely,



James D. Giattina

Director

Water Protection Division

Enclosure

cc: Jim Townsend, Louisville District, Louisville, KY
David Baldrige, Louisville District, Sassafras, KY
Joe Blackburn, Office of Surface Mining, Lexington, KY
Lee Andrews, U.S. Fish and Wildlife Service, Frankfort, KY
Carl Campbell, Kentucky Department of Natural Resources, Frankfort, KY
Bruce Scott, Kentucky Department of Environmental Protection, Frankfort, KY
Sandy Gruzesky, Kentucky Division of Water, Frankfort, KY

Attachment

Recommended Corps of Engineers Permit Conditions LRL-2008-00226, Kentucky Division of Mine Permits 880-8002 A4

- The KPDES permit (KY0040495) effluent limits include narrative standards for TDS and SC. EPA recommends adding numeric threshold value of 500 $\mu\text{S}/\text{cm}$ for SC to address state narrative criteria for TDS and SC. Under the provision of the KPDES permit (KY0040495), the effluent of Pond 22 will be monitored twice monthly for conductivity (specific conductance, $\mu\text{S}/\text{cm}$) and flow (cubic-feet-per-second, cfs), among other parameters. The conductivity and flow data will be used to determine whether an adaptive management plan must be developed and implemented.

Monthly flow-weighted conductivity shall be calculated each month for the effluent of Pond 22 as follows:

$$\overline{K} = \frac{\sum_i Q_i \times K_i}{\sum_i Q_i}$$

where:

\overline{K} = monthly flow-weighted conductivity, $\mu\text{S}/\text{cm}$

Q_i = flow for the i^{th} sample, cfs

K_i = conductivity for the i^{th} sample, $\mu\text{S}/\text{cm}$.

The monthly flow-weighted conductivity, \overline{K} , will be plotted as a time series and the trend in effluent conductivity calculated by linear regression. If the trend indicates that the monthly flow-weighted conductivity will exceed 500 $\mu\text{S}/\text{cm}$, or if any three consecutive monthly flow-weighted conductivity values exceed 500 $\mu\text{S}/\text{cm}$, then the permittee will conduct an analysis of the sources of effluent conductivity and develop an adaptive management plan to reduce effluent SC and TDS. Examples of design alternatives, best management practices (BMP), and treatment technologies to include in the adaptive management plan may include, but are not limited to:

- fill design alternatives that reduce surface area disturbance during construction and allow for a sequenced fill construction approach
- underdrain construction utilizing low-reactive durable rock
- implementing the Forest Reclamation Approach on the face of the fill and backfill areas as practicable to increase evapotranspiration and minimize infiltration through the fill
- optimizing compaction through refuse material moisture control
- the use of synthetic caps and/or liners to minimize infiltration
- enhanced stormwater drainage control through diffuse discharge to riparian zone using a weep berm-forest-passive treatment system
- the use of flocculents designed specifically to reduce TSS/TDS/SC

- floating siphons to decant the cleanest water prior to discharge to receiving streams
- additional watershed- based restoration activities within Scaffold Lick Branch designed to minimize stormwater runoff high in TDS and SC

The conductivity trend analysis and adaptive management plan shall be submitted to the Corps and EPA for approval within 30 days of determining that the trend will exceed 500 $\mu\text{S}/\text{cm}$ or three consecutive monthly flow-weighted conductivity values exceed 500 $\mu\text{S}/\text{cm}$. The plan shall be implemented within 45 days of written approval by the Corps and EPA. Implementation of the plan will continue until the trend indicates that monthly flow-weighted conductivity will fall below 500 $\mu\text{S}/\text{cm}$ or any three consecutive monthly flow-weighted conductivity values fall below 500 $\mu\text{S}/\text{cm}$.

If either the trend or monthly flow-weighted conductivity values exceed 500 $\mu\text{S}/\text{cm}$ continually for six months, the permittee will retain, within 30 days, a consultant mutually agreed upon by the permittee, the Corps and EPA. The consultant shall prepare within 90 days recommendations for additional actions to reduce effluent conductivity. These recommendations shall be implemented within 45 day of written approval by the Corps and EPA.

- The NPDES permit requires whole effluent toxicity (WET) monitoring of representative outfalls using the acute method (with both *Daphnia* and *Pimephales*). However, based on continuous surface water monitoring data submitted by Czar Coal between 1995 and 2008, EPA believes that these discharges are likely to be chronic. Therefore, EPA recommends adding a chronic WET testing requirement to the 404 permit following the requirements of 40 CFR 136 (USEPA, October 2002. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. Fourth Edition, U.S. Environmental Protection Agency, Office of Water, Washington, DC EPA/821/R-02/013; available on-line at <http://www.epa.gov/waterscience/methods/wet/>). The chronic WET tests must be performed using *Ceriodaphnia dubia* and *Pimephales promelas* and using a dilution series that includes 100% effluent and the In-stream Waste Concentration. The end points shall be reported as the inhibition concentration that affects 25% of the test organisms compared to the control (IC_{25}). Sampling shall be performed quarterly until at least four tests are obtained over the span of the term of the permit.